RESULTS AND LESSONS FROM
THE GET TECH MON VALLEY PILOT PROJECT

**Creating a Business-Education Partnership to Increase Science and Technology Skills of a
Local Workforce as a Component of a Regional, Technology-led,
Economic Development Strategy
Under U.S. Department of Commerce Purchase Order SB1359-02-W-1431**
September 2004

By Basil J. Whiting, Project Evaluator
Senior Fellow, NAM/MI/CWS

The Project: In the summer of 2002, the Office of Technology Policy (OTP), Technology
Administration (TA), U.S. Department of Commerce, executed a two-year contract (to run
through September, 2004) for a pilot project to develop and install a program of career education
in middle schools near Pittsburgh, PA, to see if it would increase students' awareness of career
options open to those who develop their math, science and technology skills and encourage those
students when they advanced to high school to choose advanced math, technology, and science
courses and vocational technology training at rates greater than those students who did not
receive this career education. This pilot was the next phase in the Get Tech career program, run
jointly by TA and National Association of Manufacturers (NAM), which had developed a kid-
friendly website and teacher lesson guide to help inform middle school children of the
importance of developing their math, science and technology skills for their future career
opportunities.

The fiscal agent for the project, who would also provide technical guidance on developing
metrics for evaluating the program, was the Center for Workforce Preparation (CWP) of the
Institute for Educational Leadership (IEL). The main substantive "lead" on the project, under
subcontract to CWP/IEL, was the Center for Workforce Success (CWS) of the Manufacturing
Institute (MI), the research arm of NAM. These partners subsequently partnered with the Mon
Valley Education Consortium (MVEC), a private, non-profit, 501(c)3 intermediary organization
that works in 25 school districts in southwestern Pennsylvania, as its local education "lead."

The main stated tasks of the project were to design a comprehensive career education curriculum
incorporating the Get Tech website (www.gettech.org), embedding the program in a small
number of middle schools in the first year and expanding it to a large number of such schools in
the second year; organize an overarching business-education partnership to support the program
with speakers, visits to worksites, etc.; create more kid-accessible career tools for the Get Tech
website; and measure results among students before and after their exposure to career education
(and of a control group not so exposed) to assess the impact of the career program. The two year
limit on the contract would not offer enough time to record whether the students sign up for
advanced math and science courses in high school in greater numbers; it was hoped that the local
area schools would continue to gather data in future years that would provide this information.

Results:

1. CWS upgraded the award-winning Get Tech website by adding effective streaming videos of young people in high tech jobs.

2. MVEC designed and twice administered a survey of middle school students' career interests, how they explore career options, what courses they take and plan on taking later in high school, their post-secondary plans, and their computer usage. The survey has been refined through its two applications and will be used to measure changes in career literacy in future years. The survey results from over 6,000 responders have provided very interesting data to the school system, helped shape the direction of the career program going forward, and been widely cited in the Pittsburgh region.

3. Local teachers designed an initial set of lesson plans incorporating career education (including Get Tech as a resource) into regular middle school courses that meet state standards for such courses. This initial set of lesson plans will be further refined in a next iteration of development and will serve as a basis for the local school system to expand its library of such teacher resources.

4. The project clearly moved MVEC much further along its agenda of promoting more effective career education in the region's schools. It now uses the project's surveys to promote the need for better career literacy in the schools of its region and plans to continue to administer the survey in future years. It has built Get Tech into its existing high school career programs. As a follow on to the pilot project, MVEC is now planning a new initiative to expand its career literacy program. The centerpiece of this initiative will be a career Internet portal that will function both as a repository for career literacy resources for teachers and students, including the lessons plans developed during the pilot project, and as a user-friendly portal for students and teachers seeking to navigate their way to and through career web sites of interest to them. MVEC plans to feature www.gettech.org in the new career portal.

5. CWS and MVEC arranged active business involvement in designing the lesson plans and assurances of support when called upon during eventual broader lesson plan implementation.

6. Teachers, students, educators, employers, and civic leaders involved in the project are enthusiastic about career education and welcome this initiative from MVEC.

These accomplishments, while clearly substantial and proportionate to the local circumstances and to the time and resources provided, were considerably less than the contract envisioned. An evaluation of the project concluded that the proposal underestimated the time and resources required to implement a career education program in the schools. While teacher and school administration buy-in was accomplished, and career lesson plans were developed by teachers, it took more than twice as long as anticipated, with the result that the career program was not implemented soon enough to allow assessment of its effect by the end of the second year. The following lessons were identified for those pursuing similar efforts in the future:

Lessons:

1. Involving respected national organizations, like CWP, CWS, and the U.S. Department of Commerce in such a project brings to it both expertise and prestige. Such organizations provide important technical assistance, facilitate access and cooperation from local leaders and institutions needed for the project, and help importantly in diffusing a project's potential and accomplishments to those who would emulate it.

2. The use of intermediaries can be an important factor in such a project's success:

    a. An educational intermediary that is accepted and respected by local schools, as was MVEC in this project, brings expertise, access, and the ability to convene, engage, and support a range of local educators in both design and implementation.
    b. Similarly, a business intermediary like the SMC Business Councils (the regional NAM affiliate) that "speaks business' language," can involve employers in the ways needed.

3. Even with effective intermediaries, project goals must be realistic in light of local circumstances and of the time and funding available. The Pittsburgh project proposed a penetration of local education and the formation of a formal business-education partnership that were both overly ambitious for the time and resources provided.

4. Modifying school curricula is a complex, slow process, dependent on local support from school leaders and teachers, on school calendars, the ability to free line teachers for continuing involvement over time, and state education standards.

    a. Externally designed new curricula—or input to curriculum— may not be readily accepted and used by a local school district. A process of involving the local school people in such design can generate ownership and acceptance.
    b. The current climate of high standards and high stakes testing means that adding to the curriculum means taking something else out. Unless the state or district requires career education, it must be embedded in the courses the state does require.
    c. School calendars are crowded and there are certain "windows" of time when interventions and changes can be attempted.
    d. Involving teachers consistently over time in such design efforts requires funding to backfill their classes behind them (MVEC estimated $500 per teacher for several sessions over several months). School districts commonly lack such funds and projects should provide them or expect to work around this need (which is slow and difficult).

5. Surveys require careful preparation and administration, sufficient time for field-testing, and sufficient resources for automated compilation and analysis of results.

6. Local "ownership" of a project increases the likelihood of its realism and feasibility. Have local entities that know local conditions design and take responsibility for implementing the project; if possible, have them do the basic proposal. Do not design and attempt to implement such a project from outside the locality.

7. National or local nonprofit entities can rarely "donate" staff time or other resources to a project. For all parties to be involved, estimate their staff time and other resources required and either fund it or obtain explicit commitments from them to provide that time in kind.

8. Oral agreements are subject to misinterpretation. All parties to a project should be involved through written agreements concluded before any party expends resources. Such agreements must clarify roles and state expected outcomes, timetables, milestones, and funding. This must apply to subcontracts concluded during the project.

9. Projects should be adequately funded to attain the project's goals and given a period of time sufficient to do so—or, adjust the goals. Participants in this project said that several times as much funding would have been required for the goals originally proposed. They also said that doing all the things originally proposed would likely have required four rather than two years. Weather, personnel turnover, and other impediments to progress are common facts of life and can delay progress—and these occurred in this project. Be prepared to adjust to or allow for such events.